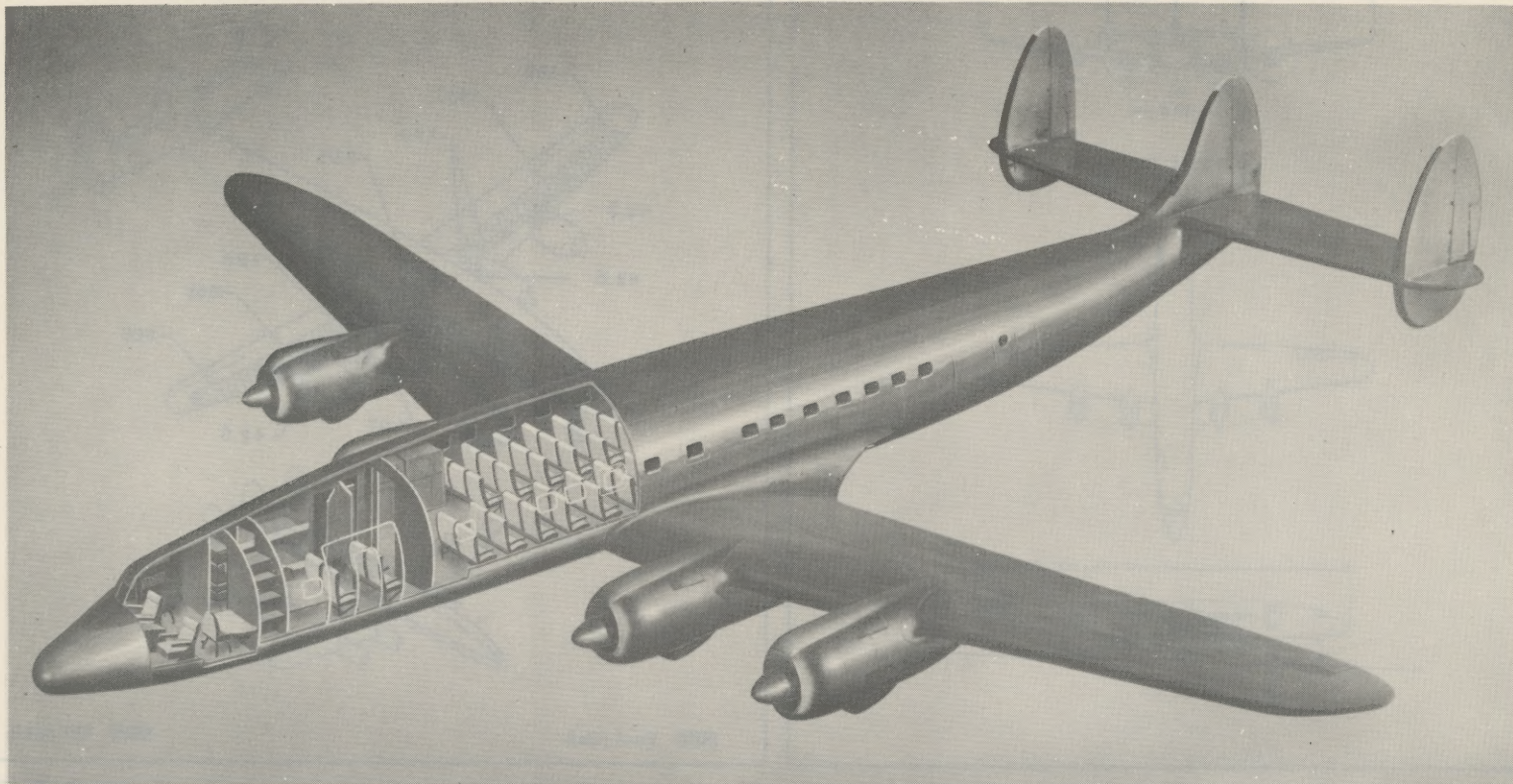


U N C L A S S I F I E D

SERVICE



Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

C-121C
SUPER CONSTELLATION
Lockheed

FOUR R-3350-34

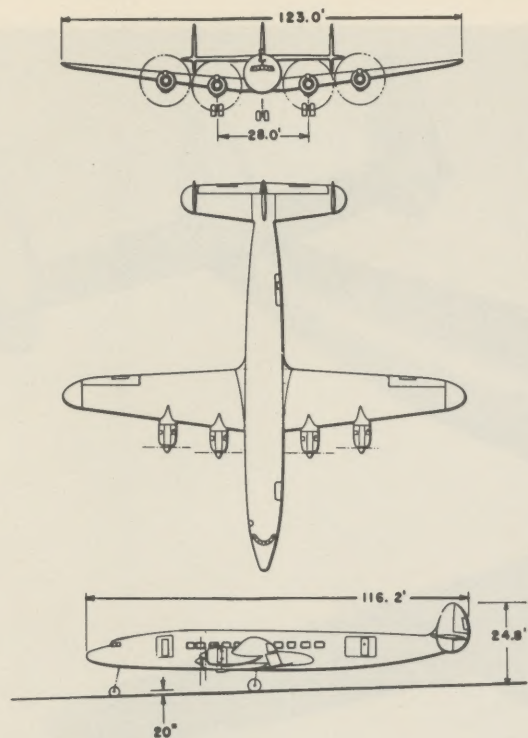
WRIGHT

1 APR 55

U N C L A S S I F I E D

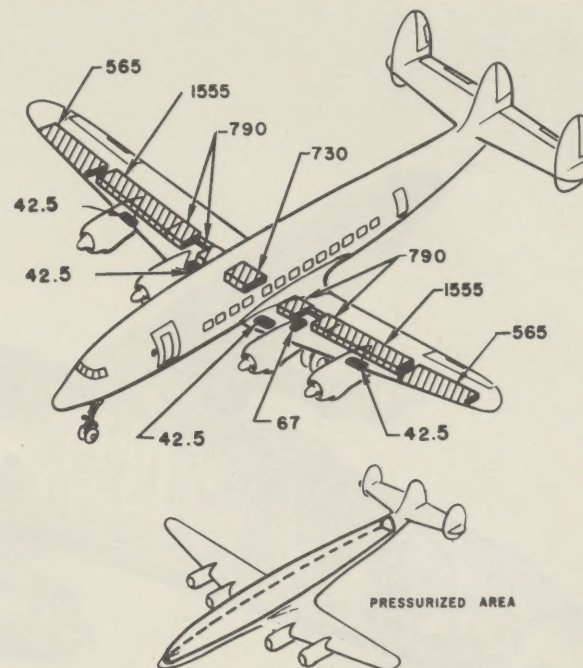
C-121C

UNCLASSIFIED



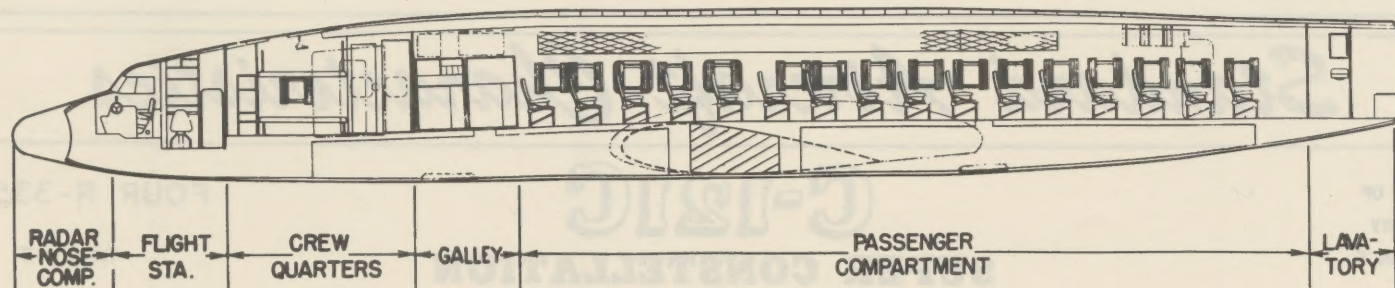
Wing Area 1650 sq ft
Aspect Ratio 9.17

Wing Section (root) . . . NACA 23018
(tip) . . . NACA 4412
M. A. C.176 in.



Fuel (Gal)

Oil (Gal)



C-121C

UNCLASSIFIED

1 APR 55

POWER PLANT

No & Model (4) R-3350-34
 Mfr Wright
 Engine Spec No. N-872
 Superch 1 stg, 2 spd
 Red. Gear Ratio 0.4375
 Prop. Mfr HamiltonStd
 Blade Design No. 6903A-O
 Prop. Type Hydra, FF, Rev'r
 No. Blades 3
 Prop Dia 15'-2"

ENGINE RATINGS

BHP - RPM - ALT - MIN

T.O: *3250 - 2900 - S.L. - 5
 Mil: *3250 - 2900 - 5500 - 5
 **2550 - 2600 - 17,000 - 5
 Nor: *2600 - 2600 - S.L. - Cont
 *2650 - 2600 - 6500 - Cont
 **2450 - 2600 - 17,900 - Cont

* Low Blower
 ** High Blower

DIMENSIONS

Wing
 Span 123.0'
 Incidence (root) 3°
 (tip) 1°
 Dihedral 7°36'
 Sweepback (L.E.) 7°30'
 Length 116.2'
 Height 24.8'
 Tread 28.0'
 Prop. Grd. Clearance 20"

Mission and Description

Navy Equivalent: R7V-1

Mfr's Model: 1049F-55-96

The principle mission of the C-121C is the transportation of cargo. It is also readily convertible to personnel or litter configurations without structural modification.

Features include Fowler flaps, control surface boosters, pressurized fuselage, and rubber de-icer boots.

The airplane is similar to the Lockheed 1049 Super Constellation except fuselage and wing have been reinforced for 150,000 pound take-off weight, new landing gear, fore and aft cargo doors, a heavy cargo floor, and increased fuel and oil capacity have been incorporated.

Development

Development of Commercial Model 1049

Contract Date 16 Dec 53
 First Flight 25 Jul 55 (est)
 First Acceptance 31 Jul 55 (est)
 First Service 15 Aug 55 (est)

CAPACITIES

Max Cargo: See Payload Graph, page 5
 Main Comp't (max) 4875 cu ft
 Main Comp't (min.) 3031 cu ft
 Aft Lower Comp't 424 cu ft
 Fwd Lower Comp't 269 cu ft
 Main Comp't Floor Area 744 sq ft
 Main Compartment:
 Length (overall) 83.3 ft
 Width (max) 11.6 ft
 Height (max) 6.7 ft
 Main Cargo Door:
 Width 9.3 ft
 Height 6.1 ft
 Fwd Cargo Door:
 Width 5.1 ft
 Height (max) 6.4 ft
 (min.) 6.0 ft

PERSONNEL

Crew 4
 Pilot, Co-pilot, Flight Engineer
 and Radar Navigator
 plus
 Relief Crew 4
 Troops (max) 72
 or
 Litters (max) 47
 plus
 Attendants 2

WEIGHTS

Loading	Lb	L. F.
Empty (cargo)	72,815(C)	
Basic (cargo)	75,132(C)	
Design	133,000	2.5
Combat	*88,600	
Max T.O. (overl'd) †	145,000	2.25
Max T.O. (normal) †	133,000	2.5
Max Land	‡122,000	

(C) Calculated

* For Basic Mission

† Limited by strength

‡ Limited by 7 fps sinking speed at 1 "g" wing lift

FUEL

Location	No. Tanks	Gal
Wing, outer	2	1130
Wing, inner, out'bd	2	3110
Wing, inner, inb'd	2	1580
Wing, center	1	730
Total		6550
Grade		115/145
Specification		MIL-F-5572

OIL

Wing	3	152
Nacelles	2	85
Total		237
Grade		1100
Specification		MIL-L-6082

ELECTRONICS

VHF	AN/ARC-36
UHF	AN/ARA-25
UHF	AN/ARC-34
IFF	AN/APX-6
IFF	AN/APX-25
ADF Recv'r (2)	AN/ARN-6
Marker Beacon	AN/ARN-12
Glide Slope	AN/ARN-18
Loran	AN/APN-70
VOR Recv'r	AN/ARN-14
VOR Recv'r	AN/ARN-21
Navig. Radar	AN/APS-42A
ICS	AN/AIC-10
Radio Altimeter	SCR-718D
Radar Altimeter	AN/APN-22
Emerg. Trans. (2)	AN/CRT-3
Emerg. Keyer	AN/ARA-26
PA System	MI-36
Test Set	TS-352

Loading and Performance—Typical Mission

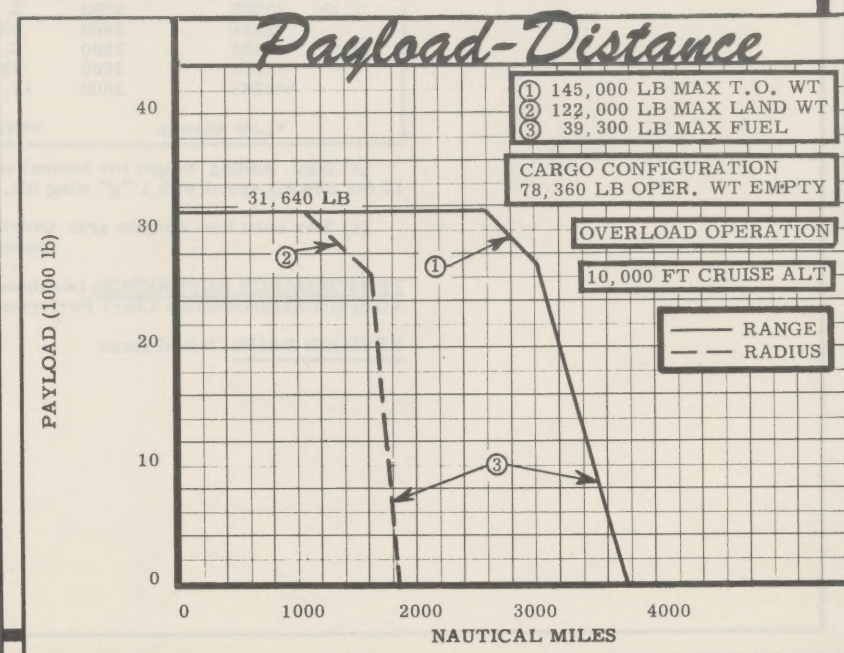
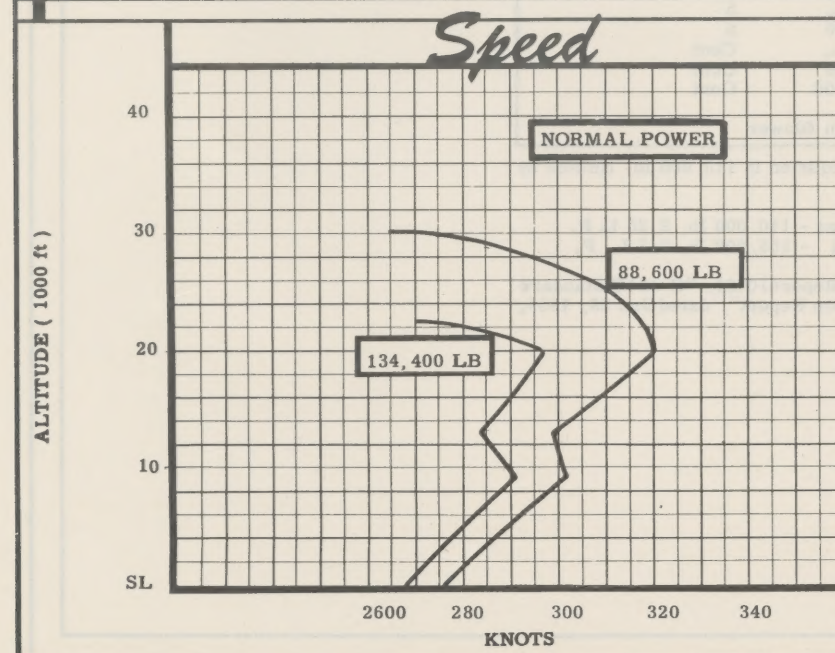
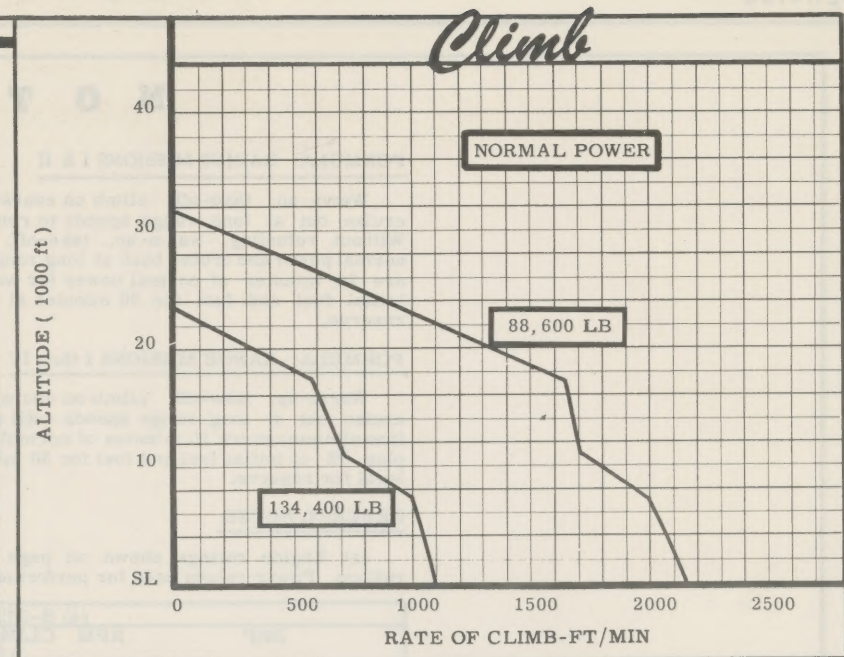
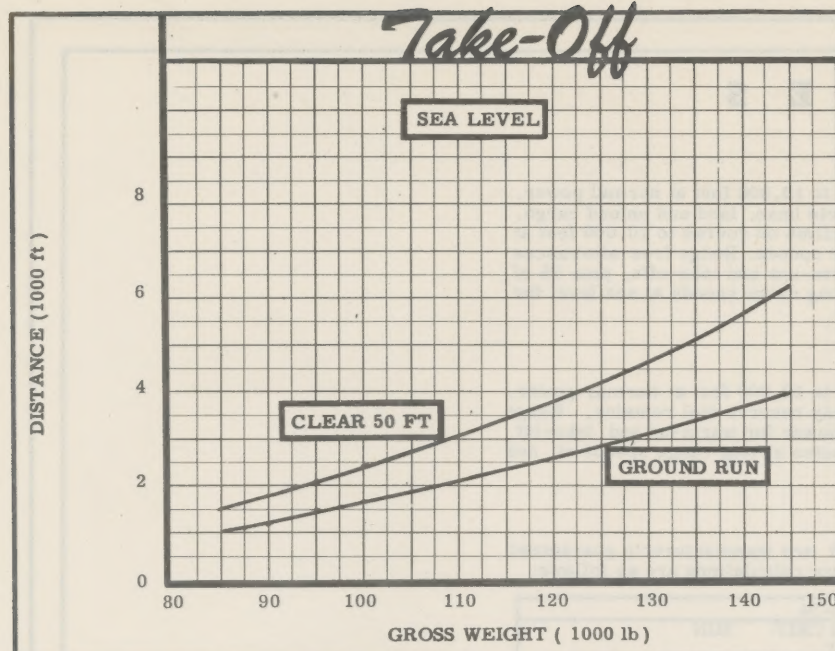
C O N D I T I O N S			BASIC MISSION (CARGO)	NORMAL (PERSONNEL)	DESIGN (PERSONNEL)	FERRY RANGE (CARGO)
TAKE-OFF WEIGHT	(lb)		134,400	II 122,500	III 133,000	IV 117,660
Fuel at 6.0 lb/gal (grade 115/145)	(lb)		24,400	23,500	28,030	39,300
Payload (outbound)	(lb)		31,640	16,500	22,470	None
Wing loading	(lb/sq ft)		81.5	74.3	80.6	71.3
Stall speed (power off)	(kn)		96	91	95	90
Take-off ground run at SL	(ft)	①	3390	2740	3300	2500
Take-off to clear 50 ft	(ft)	①	5100	4050	4975	3660
Rate of climb at SL	(fpm)	②	1100	1330	1120	1430
Rate of climb at SL (one engine out)	(fpm)	②	580	750	600	830
Time: SL to 10,000 ft	(min)	②	10.0	8.3	10.0	7.7
Time: SL to 20,000 ft	(min)	②	27.3	21.0	26.0	18.7
Service ceiling (100 fpm)	(ft)	②	22,300	24,550	22,600	25,500
Service ceiling (one engine out)	(ft)	②	15,100	19,000	16,100	19,900
COMBAT RANGE	(n.mi.)	③	1810	1954	2190	3760
Average cruising speed	(kn)		225	218	223	209
Initial cruising altitude	(ft)		10,000	10,000	10,000	10,000
Total mission time	(hr)		8.1	9.0	9.9	18.0
COMBAT RADIUS	(n.mi.)	③	1000	1000	—	—
Average cruising speed	(kn)		212	212	—	—
Initial cruising altitude	(ft)		10,000	10,000	—	—
Total mission time	(hr)		9.5	9.5	—	—
FIRST LANDING WEIGHT	(lb)	④	120,825	110,000	—	—
Ground roll at SL	(ft)		2630	2375	—	—
Total from 50 ft	(ft)		3730	3410	—	—
COMBAT WEIGHT	(lb)	④	88,600	92,870	107,280	80,940
Combat altitude	(ft)		10,000	10,000	10,000	10,000
Combat speed	(kn)	②	301	300	297	302
Combat climb	(fpm)	②	1800	1680	1340	2020
Combat ceiling (500 fpm)	(ft)	②	27,300	26,450	23,500	28,900
Service ceiling (100 fpm)	(ft)	②	30,800	30,050	27,400	32,300
Service ceiling (one engine out)	(ft)	②	25,400	24,650	21,800	27,000
Take-off ground run at SL	(ft)	①	1260	1410	—	—
Take-off to clear 50 ft	(ft)	①	1830	2060	—	—
Max rate of climb at SL	(fpm)	②	2160	2050	1670	2400
Max speed at 20,000 ft	(kn)	②	320	319	314	322
Basic speed at 25,000 ft	(kn)	②	309	306	293	313
LANDING WEIGHT	(lb)	④	80,205	93,500	107,280	80,940
Ground roll at SL	(ft)		1680	1990	2310	1690
Total from 50 ft	(ft)		2520	2995	3330	2540

NOTES

- ① T.O. power
② Normal power

- ③ Detailed descriptions of RADIUS and RANGE missions are given on page 6.
④ For Radius Mission if radius is shown

PERFORMANCE BASIS:
(a) Data Source: Flight Tests of R7V-1 and Lockheed 1049E.
(b) Performance is based on powers shown on page 6.



N O T E SFORMULA: RADIUS MISSIONS I & II

Warm-up, take-off, climb on course to 10,000 feet at normal power, cruise out at long range speeds to remote base, land and unload cargo. Without refueling, warm-up, take-off, climb on course to 10,000 feet at normal power and cruise back at long range speeds. Range free allowances are 20 minutes of normal power for warm-ups and take-offs, plus 5% of initial fuel and fuel for 30 minutes at long range speeds at sea level for reserve.

FORMULA: RANGE MISSIONS I thru IV

Warm-up, take-off, climb on course to 10,000 feet at normal power, cruise out at long range speeds until only reserve fuel remains. Range free allowances are 10 minutes of normal power for warm-up and take-off, plus 5% of initial fuel and fuel for 30 minutes at long range speeds at sea level for reserve.

GENERAL NOTES:

(a) Engine ratings shown on page 3 are manufacturer's guaranteed ratings. Power values used for performance calculations are as follows:

(4) R-3350-34				
	BHP	RPM	CLIMB CRIT	MIN
			ALT	
T.O:	*3225	2900	S.L.	5
	*3225	2900	4000	5
Nor:	*2575	2600	S.L.	Cont
	*2625	2600	7200	Cont
	**2385	2600	17,200	Cont
*Low Blower		**High Blower		

(b) Max landing weight for normal operation is 110,000 lb, limited by 10 fps sinking speed with 1 "g" wing lift.

(c) Max zero fuel weights are: overload - 110,000 lb, 2.25 L.F.
normal - 105,000 lb, 2.5 L.F.

PERFORMANCE REFERENCE: Lockheed Report 10401, "C-121C Standard Aircraft Characteristics Chart Performance Report", dated Jan 28, 1955.

REVISION BASIS: Initial Issue

SUPPLEMENTAL